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ABSTRACT

Australian Outward Bound participants almost universally report their experience in the course as being significant in their lives. The relevance of Outward Bound to the normal progress of life enables it to make significant contributions to society and man's future. An Outward Bound course is designed to encourage students to take responsibility for and control of themselves through self understanding, and it provides opportunities for responsible and productive action and close involvement with the physical, social, and natural environment. The programme also fosters self-actualization. The concept of adventurous learning through guided discovery which underlies Outward Bound teaching techniques is important in the development of intrinsic motivation. The program also works significantly in the areas of the individual's self-concept by bringing each student into confrontation with his physical, social, and psychological limits and abilities. The de-emphasis of subject matter and irrelevance of age grading, and the emphasis on techniques for meaningful learning appropriate to the participants' level of readiness contribute to the individual's effective cognitive growth. Recent studies have indicated that an Outward Bound course provides a significant experience for the participant during the course and has ongoing effects after completion of the course that may last a lifetime. (Author/CM)

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SOME PSYCHOLOGICAL BASES, & ASPECTS OF OUTWARD BOUND

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This paper attempts to look at some of the psychological bases and constructs which underlie the design and hopes of Outward Bound courses. It centres mainly on the standard Outward Bound course for young men and women aged 17-25 years, although it also looks in passing at some significant aspects of Outward Bound courses for secondary schools and for men and women over 30 years of age.

The courses described are those operating in Australia in this year (1976) and the last few years.

As courses are continually being modified, and hopefully "improved" this paper should not be seen as a definitive statement on either aims or practices. Outward Bound relates to people and so is liable to shift in approach and methods.

This is the third paper I have written in my attempt to look more closely at the reasons why Outward Bound has been so successful in having a significant impact on people. The first looked at "Sociological Aspects of Outward Bound", the second at "Leadership and Outward Bound".

Should you find the paper interesting or useful I would be pleased to have your comments; should you find it otherwise, please ensure you let me know as I am currently working on two more papers and would appreciate helpful suggestions.

As with the previous two papers I would ask that this paper be considered in draft form and consequently neither reproduced nor quoted from without my prior approval.

I found the task of looking at such an area as the psychological bases of Outward Bound predictably difficult. I apologise for the length of the paper and at the same time for the limitations of the range of the variables discussed, as well as for the jargon which was used in attempt to cover more, with fewer words.

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August 1976

P. INDEX

P.2. Introduction
P.3. Outward Bound areas of concern: Adolescence
P.5. " " " " : Early Adulthood
P.8. The Contributions of Outward Bound Education
P.10. Motivation/Arousal
P.13. Goal Setting and Achievement
P.16. Discovery Learning
P.19. Creativity, Problem Solving & Education for Future.
P.22. Anxiety and the Outward Bound Experience
P.27. Outward Bound Effects on Self-Concept.
P.34. Interdependance of Variables Influending Affective Outcomes of Outward Bound
P.36. Cognitive Aspects of Outward Bound Programmes
P.40. The Question of Transfer
P.43. Some Conclusions
P.48. References
P.54. Bibliography: General
P.55. Bibliography: Specific

SOME PSYCOLOGICAL BASES AND ASPECTS OF OUTWARD BOUND

The Australian Outward Bound School is one of over thirty schools throughout the world involved in presenting a different form of educational experience to its students. The purpose of this paper is to attempt to present some ideas on the psychological processes underlying this form of education and to present evidence which may be relevant in increasing understanding in this field.

In pursuit of this aim there are three major areas of difficulty encountered. Firstly there is, unfortunately, a dearth of research directly into Outward Bound and although this situation is rapidly being overcome (1) I am nevertheless left in a position in which careful study of research literature in allied fields must be made for relevant and hopefully transferable extrapolations. This is an obvious weakness and I ask the readers' indulgence should I tend to draw conclusions without continually burdening the flow of exploration with qualifications on the problems of drawing references and implications.

The second difficulty in presenting this paper lies in finding a way to present the psychological aspects of courses which cover such a wide range. The factors involved in effective cognitive, personal and skills development of a 12 year old boy engaged in an integrated geography, social studies, science programme in the bush are obviously different to the more deliberately character development orientation standard course programme being engaged in by a 25 year old man or woman.

3/...

Quite apart from the age differences (to be discussed next) there are clear differences in; course content - from academic to social or psychological emphasis; course length - from maybe as short as six days for a special school programme to twenty six days for a standard course; course location and climate - from tropical North Queensland to winter in Tasmania; just to mention some of the variables involved in Australian Outward Bound courses.

In order to make discussion manageable I will centre most of my observations on the standard course for young men and women 17-25 years of age although I will mention schools programmes and Pack and Paddle courses - both for ages 12-16 years.

The third difficulty lies in clearly defining the age and so developmental stages of Outward Bound students. This difficulty stems from the range of programmes for boys 12 years to 16 years, standard courses for young men and women aged 17 to 25 and adult courses for men and women over the age of 25 years.

OUTWARD BOUND AREAS OF CONCERN: Adolescence

The traditional and continuing main thrust of Outward Bound has been in the area of young people aged between 16 years and 25 years and before proceding further I would like to look at this area of adolescence/early adulthood, for without some understanding of this stage of human development it is pointless in looking at what influence or effect Outward Bound may be having on these people.

In their recent studies of Sydney Youth, Connell (et al) illustrated the confusions which arise in handling the concept of adolescence and point out that (2) "unlike the concept of puberty which can be defined with some degree of exactness using measurable physical indices, the more popularly favoured concept of adolescence, loosely meaning 'growth into maturity' is bedevilled with arbitrary and confusing connotations - The concept encompasses physical and sexual development, psycho-social experiences, personality maturation as

4/...

well as others. Some sociologists for example argue that admission to adulthood is controlled by regulation of social norms and custom. This view has been influential in extending the use of the term adolescence to include the whole of the teenage years, even the early twenties, on the ground that adult status and social roles may not be achieved in society until then. The result of this is to diffuse the meaning of the term considerably and to encourage considerable laxity and ambiguity in its use. This drift and blurring of 'technical' meaning has encouraged an even greater devaluation of the term in popular usage. It is not uncommon to hear that change during the teenage years can be conveniently divided into pre-adolescence (10-12 years); early adolescence (12-14 years); middle adolescence (14-16 years); late adolescence (16-20 years) and young adulthood (21-25 years) in spite of the complete absence of evidence for these divisions".

The key to understanding this confusion about the nature of adolescence is that it is a process of transition - i.e. it is by definition then a time of change and movement and so elusive to specific description. We are however, able to look at the nature and effects of the changes and movements.

(3) Before transition from adolescent to adult status is embarked upon, the individual defines himself largely in terms of his role in the family in which he is economically and psychologically dependent. After it is completed, he sees himself in terms of his individual social roles defined by occupation, status and group membership. This transformation occurs during years of rapid biological change marked by the development of new strengths and new drives. They are years in which changes are often occurring with such bewildering speed that the individual's own body and his social role are both unfamiliar. The primary psychological task to be accomplished through all these changes is to preserve and develop a personal identity and a capacity to relate to others.

It is the recognition of the desirability of offering assistance to this process that inspires the continuation of Outward Bound programmes, especially in such a developed social climate as Australia today.

5/...

The youth of Australia lives in a highly complex and rapidly changing culture and is subject to many external strains.

(4) He has for example, as well as a great number of developmental tasks to achieve, many complicated choices to make and therefore runs a great risk of choosing inappropriately. The anxieties of decision making are multiplied not only by the existence of conflicting social and moral standards but also by our belief in the importance of choice and in the individual's responsibility for the consequences of his behaviour. Hence adolescents need to adjust to the contradictory values, goals and behaviours of adults and these demands to adjust are increased by the rapid technological and social changes which characterise the present century and which make interpreting society's expectations ever more difficult.

OUTWARD BOUND AREAS OF CONCERN: EARLY ADULTHOOD

Although the adolescent might then be seen to be a person who warrants our understanding (if not our sympathy in some circumstances) there is at least a large body of research and a great deal of concern for this stage of development. In many ways this seems to have been to the detriment of a period of life which is even more difficult to define and even more transitory than adolescence, i.e. early adulthood.

This period attracts far less interest and seemingly less research, yet its significance in the life of the individual must be seen as critical. It is in this broad area (say 17-30 years) that Outward Bound has been most interested, especially in its standard courses where the average student age on these programmes is about 20 years.

Experience in Outward Bound has led to an intuitive feeling that it is young men and women over the age of twenty years who best understand and gain from the psycho-social aspects and demands of an Outward Bound course. In our society however it is at this age that most other organisations and agencies

6/...

have either lost touch with, or interest in, young people.

Robert Havinghurst expresses this particular concern also and points out that (5) "of all the periods of life; early adulthood is the fullest of teachable moments and the emptiest of efforts to teach.It is a time of special sensitivity and unusual readiness of the person to learn. Yet the amount of educative effort expended by society on people is probably less during this period than during any other period except old age - if we make proper exception of college and university which are really an extension of schools and seldom deal with the developmental tasks and problems of young adults.

If people need help with their developmental tasks in early adulthood and if educational and social agencies can give them what they need, let them have it. Early adulthood is the most individualistic period of life and the loneliest one, in the sense that the individual must proceed with a minimum of social attention and assistance to tackle the most important tasks of life. This loneliness and egocentricity of early adulthood is further confused by the relatively unorganised nature of this period in life which marks a transition from an age-graded to a social-status graded society.

During childhood and adolescence one climbs the age ladder. This simple age-grading however, stops in our culture somewhere around sixteen to twenty. It is like reaching the end of the ladder and stepping off onto a new, strange cloud-land with giants and witches to be circumvented and the goose that lays the golden egg to be captured if only one can discover the know-how".

These then are the people with whom Outward Bound is dealing, those who become Outward Bound "students". Their development,direction, idiosyncracies, hopes, fears, failures and achievements are at the very core of the justification of existence of an organisation whose very name indicates that its interests lie in those persons who are leaving the roles and protections of the position of child and are "Outward Bound", moving out on their independent journeys in adult life.

7/...

It is this journey, both fascinating and vital, that Outward Bound attempts to influence . Outward Bound is inextricably bound to the very substance of the life and development of the individual. It is this basic reality of involvement with human development and all its idiosyncracies that often gives the impression to the observer that Outward Bound is all things to all people. This it is clearly not, nor is it a panacea for all human ills or a stimulant to all aspects of the development of man. It does however find its application relevant to a fascinating range of views of man and approaches to human development. For exanple it believes with Leon Eisenberg (6) that "no society can hope to survive that does not succeed in harnessing the constructive, searching suprapersonal and supranational drives of the adolescent, and that... the provision of an optimal framework for adolescent development is inseparable from the struggle to create a better world".

Eisenberg also points out (7) that "just as growth requires adequate nutrition - so psychological maturation is dependent upon 'psychological nutrition', that is, sequential opportunities for cognitive and social stimulation so timed that they promote further mental development".

It is, of course, the high value in which outward Bound holds these aims that leads the school to be one in which the actual teaching of technical skills takes second place to activities which would suit Jerome Bruner's (8) ideal curriculum "built around the great issues, principles and values that a society deems worthy of the continual concern of its members".

Should the procedures I will outline later be as effective as people in Outward Bound have so often observed them to be, then Outward Bound may also be seen to be making a significant contribution towards the achievement of the goal set by Emile Gagne (9) "to guide individual development in the context of society through recognisable stages of development towards perceptive understanding, mature judgement, responsible self-direction and moral autonomy".

8/...

One of the difficulties (**) that Outward Bound encounters in pursuit of these ideals is the difficulty of dealing with a very heterogenous group of students none of whom are a 'tabula rasa'but who bring with them both the advantages and disadvantages of their experiences and learning in their lives up to that point. Quite often this prior learning has not been constructive and regrettably many family and school experiences may have been deleterious. (One of the most notable protagonists of this view, Paul Goodman (10), suggests that products of formal schooling are not inventiveness, flexibility, resourcefulness, curiosity or judgement but rather ignorance, self contempt, alienation, apathy, powerlessness and resentment).

THE CONTRIBUTIONS OF OUTWARD BOUND EDUCATION

There are few educators who would question the value of developing the young people of the world into what Richard de Charms calls "Orgins", rather than "pawns". He describes an "origin" as "(11) a person who feels that he is the director of his life. He feels that what he is doing is a result of his own free choice: he is doing it because he wants to do it; and the consequences of his activity will be valuable to him. He thinks carefully about what he wants, now and in the future and chooses the most important goals. He is genuinely self-confident because he has determined how to reach his goals through his own efforts. He is not 'dependent of destiny' since he is aware of his abilities and limitations. Relying on personal insight gleaned from instructive failures and skilful successes he contrives to allow his strengths to outweigh his weaknesses. In short, an "origin" is master of his own fate".

The question that educators discuss is usually not the desirability of this state of self responsibility and direction in a person, but how to achieve it. Schools, school systems, teachers and parents have been trying for decades but have clearly found the achievement of their aims elusive.

James Coleman in 1971 wrote: "(12) As our society has become information rich, it has also become action poor. It has become poor in the necessity and possibility for struggle against the environment. As affluence has increased, the child's

(**)It should be also noted that this heterogenous nature of participants also provides great advantages in the ensuing interaction and learning processes.

9/..

environment has become impoverished in opportunities for responsible and productive action, or any action that tests and develops him".

It is into this impoverished area that Outward Bound steps with unique programmes designed to bring the student into close confrontation with both himself and his physical and social and natural environment. The whole programme is action oriented as well as designed to ensure the best possible conditions for effective feedback and learning. For example, during the major expedition of 21 days the groups of twelve students undertake a river journey. This journey is not simply a matter of each individual in his own canoe mastering the technical skills of white water canoeing but instead is designed to maximise the number and type of demands placed on each student and the group as a whole. The programme involves each person learning complex river signals and coming to understand (i.e. able to "read") the rapids in the river. Having mastered these skills and the ability to paddle through a long rapid on an inflatable air mattress he must then be able to read the rapid and send back signals to the remainder of his group who are at the top of the rapid in canoes and inflatable life-rafts waiting for vital directions. Hence the "scout" not only has to take responsibility for his own actions but for the whole group and their equipment. This responsibility rotates throughout the group. Those who are not scouting also have to assume clear responsibility for action. Those in the two man canoes must co-ordinate with each other and make quick and vital decisions as they descend the white water. The four people in the inflatable rafts have an unwieldy and vulnerable craft, four sources of independent action in the crew and the vagaries of a fast moving river to overcome.

Similarly each individual student faces the challenge of rock-climbing and abseilling, the mastery of the fears and uncertainties of the first small climb to the progressive exhilaration, achievement and satisfaction of the bigger climbs. In every activity sound technical training is followed quickly by opportunities for experience and the necessity of taking responsibility for actions both as an individual and as a member of a group of people from diverse backgrounds trying to combine to achieve group goals.

10/...

There is not doubt that this natural interaction with the environment in a carefully guided situation is as central to Outward Bound as it is so sadly overlooked in more formal education. Equally sad is the failure of so many practising teachers and educators to recognise the motivational strengths inherent in such an interaction.

MOTIVATION/AROUSAL

Of all the views about the underlying determinants of motivations, from the simple "tension-reducation" model,the basic drives of Freud, and the concept of 'homeostasis' and the association-learning through reinforcement' model of Dollard & Miller (13): the "Force for Growth" model, best represented by Carl Rogers (14) and Abraham Maslow (15), is that which best suits the aims, principles and practices of Outward Bound.

This model centres on the view that when given the opportunity to express the highest qualities of thought, creativity, altruism and humanitarianism of which he is capable, the individual will do so. It takes quite a different stand point from the 'tension-reduction' view which would make the observations of behaviours at Outward Bound more difficult to explain. For example it is difficult to explain through the tension reducation model, the motivational forces involved in a claustrophic student descending 80 feet into a dark cave or an unfit and overweight student packing food for ten days and setting off knowing he had 150 miles of very demanding hiking ahead of him. However, the "force-for-growth" model seems more useful, for it helps us to understand why the adolescent normally seeks independence and autonomy even though he is safer and more comfortable remaining dependent on parents - and why he is prepared to accept the discomfort of sleeping on the ground, packing up and making camp in a new and strange environment every night at Outward Bound instead of staying in the security of home.

This process of "self-actualisation" leads a person towards constantly striving to realise his inner potential. However, this growth will only occur if

11/...

conditions make it possible and the individual has the opportunity. Hence these higher needs will not be gratified or even permitted expression if the more urgent primitive needs are unsatisfied or if the social conditions of life continue to require a survival struggle to a degree that prevents the realisation of higher potential.

This points out one of the basic needs of a well designed Outward Bound course. That is the need to provide consonant social learning experiences as well as psychological learning opportunities and indeed in many cases, such as that just stated, as a necessary pre-requisite for full and integrated psychological growth to take place. It is the integration of development of self concept, increased skills and physical ability, decision making and group processes, continual close and honest feedback from the group and instructor, and confrontations with nature and self, that are most likely to make possible to the individual the learning of the social skills and knowledge of self that forms the base from which a process of self actualisation can be launched.

The importance of the "self-actualisation" concept to Outward Bound is seen in the lack of absolute standards and activities of a competitive nature. Instead each student is encouraged, in an accepting and supportive environment of fellow students and instructors and philosophy - to do hisbest - but set his own standard. This philosophy is introduced right from the first day through a series of events ranging from an introductory/orientation talk which presents the motto of "striving and not yielding" to the "exercise maxima" event wherein each student attempts to do as many repetitions as possible on five physical activities in order to establish his own level of fitness and establish the base standard for himself. Hence from the start, the course is physically and philosophically oriented towards maximised potential for actualisation in a direction and to a limit set by each individual.

However, provision of the appropriate circumstances alone does not necessarily lead to motivation. Frequently there is also the need to increase or effect arousal.In this regard Outward Bound has the potential to be quite effective.

12/...

If we look at some sources of arousal change it is not difficult to see why.

For example (16) Berlyne distinguished three groups of properties of arousal stimulation,"psychophysical", "ecological" and "collative". The "phychophysical properties including changes in intensity and type of stimulus,abound from the first few minutes. After alighting from the bus the student will have met a large number of new people, new routines, extraordinary physical demands, including cross-country run, morning and afternoon exercises, morning swim, new equipment, and training in first aid, bush navigation, safety, public speaking etc. etc. Similarly do "ecological" (i.e. emotional/biological) properties abound in activities such as the ropes confidence course with its balances, jumps, flying fox etc. and confrontation with group initiative tasks such as determining how to get all twelve men over a beam suspended nine feet above the ground without aid. The third set of variables, i.e. "collative" properties include properties which cause an interaction between person and stimulus,and are considered by Berlyne to be of supreme influence with regard to the induction of curiosity and exploratory behaviour. "Collative" properties depend on the collation or comparison of information from different sources and include novelty, complexity, ambiguity and incongruity, and other properties containing unexpectedness and uncertainty. Again Outward Bound is structured to ensure that these features abound. Within four days of arrival these participants from commerce or industry or privately sponsored, students or workmen, all set out on an expedition which they have organised largely themselves in terms of route and menu planning, re-supply etc. - a novel situation encompassing many smaller novel situations. The complexity of this situation is apparent, in the equipment and food planning and organisation of twelve people under such demanding conditions. Having set out, ambiguities of roles and factors effecting needed decisions in navigation and organisation surround the students in every area of the programme while significant incongruities are constantly thrown up - consider for example a group of twelve, pressed for time in the middle of the bush - needing to move forward, at the same time through their close group involvement and interaction they are developing an increasing compassion and concern for each other - into this situation place a badly blistered foot - walk and lose time and

13/...

disrupt their aims as a group? or rest the person fully for some days (impossible!)?

Hence we find that throughout the 26 days students are in a constant state of high arousal.

Although I will deal with the concept of transfer later it can be observed at this time that there is considerable relevance in the effects and practices outlined above to the cognitive domain as well as the affective. This thinking is behind the operation of schools programmes by Outward Bound wherein learning is based on curiosity or intrinsic motivation instead of operant conditioning and is designed to contribute significantly to the development of (hopefully) an insatiable desire not just to learn for some extrinsic reward (e.g. a school grade) but to continue learning throughout life and to constantly explore and search for understanding in, the ever changing environment.

GOAL SETTING AND ACHIEVEMENT

Important in this process as well as on the standard course is the development within the structure of the course of skills and understandings which allow continuing success. Hence map reading, bush navigation, preliminary orienteering exercises lead onto an expedition accompanied by an instructer, then a later period with the instructer rejecting any active role and finally to students in groups of six planning and setting out to complete a four day expedition in very demanding country with no instructional staff ever sighted.

These opportunities for self reinforcement and success and constant expectation of further success has a desirable effect on motivation, achievement and subsequent goal setting. Throughout the programme students are constantly in a position of goal-setting. It is important to understand something of this process as Outward Bound hopes to raise each students' goal setting level and extend his estimates of his own limitations.

That Outward Bound does in fact raise expectations of higher achievement and extension of personal limits is well testified. The process however simple is little understood though easily seen. By having no absolute standards

14/...

by which a person can judge themselves to have failed, by developing skills according to the ability of the individual and by creating a nurturant environment, each individual either succeeds in the goal he has set, or judges himself to be still working at it. Add to this the generally high level of achievement motivation that is soon established in students (to be discussed in more detail later) and you have the well known "law of effect" established by learning theorists, in which success at a task followed by some reward leads to repetition of that, or similar, tasks.

Atkinson (17) adds more point to the effects of such success on goal setting in explaining that the achievement oriented individual chooses to undertake a task when the probability of success is .50. If he does so and succeeds, the change in expectancy of success on the next task will produce a change in motivation and in the goal set. What was initially considered of intermediate difficulty at the .50 level is now considered relatively easy at the .70 level. That is, after success a higher goal will be set, with the 50-50 probability of achieving success. Failure operates in the same way and can so often be seen to do so in normal school settings. Atkinson points out that the effects of both success and failure generalise to other goal setting activities, but more importantly he explains that the normal "law of effect" concept isn't entirely an adequate description. He theorizes that it is the incentive to engage in a task that is directly related to the expectancy, results in a change in incentive. It can then be concluded that when a student whose motive to succeed is greater than his motive to avoid failure has a success experience, instead of seeking to repeat his success on a similar task in the future he will raise his aspiration level and look for a harder, more challenging task.

Hence the structure of the Outward Bound programme which itself presents students with challenges of increasing difficulty and places them in positions of increasing goal setting independence optimises the prospects of raised levels of aspiration, incentive and achievement.

I have mentioned that a high level of achievement motivation is soon established on an Outward Bound course. A statement such as this needs some explanation.

15/...

By observation of students on an Outward Bound course and through students' self reports it becomes obvious that during the course there is an increase in achievement motivation. The reason for its development may be difficult to articulate however if we look at the work of McClelland (1965) (18) we may find some answers.

An Outward Bound course is not a training programme for achievement motivation as McClelland sets up his training programmes to be. However McClelland's results seem to give clear evidence that achievement motivation can be developed through such a programme as his and the parallels between his programme and and Outward Bound programme cannot escape our notice.

For example McClelland lists three overall characteristics of his training program as: 1) the interpersonal atmosphere of the training should be one in which the individual feels warmly but honestly supported and respected by others as a person capable of guiding and directing his own future behaviour. 2) The setting of the training should dramatise the importance of self-study and lift it out of the routine of everyday life. 3) The new behaviour should be a sign of membership in a new reference group. These characteristics are also clearly those of an Outward Bound course.

Similarly the nine phases of his actual training programme are similar to the phases which underly the development observed in an Outward Bound course.

Although it is only by implication and casual observation, we may reasonably conclude that Outward Bound contributes to the development of high achievement motivation.

This is significant not only (19) "as there is some evidence that indicates that persons with high needs for achievement lead more vigorous, interesting, productive and less anxious lives but also because achievement motivation is so essential to other aspects of cognitive, social and psychological development.

16/...

DISCOVERY LEARNING

For example both in the specially designed integrated academic/experience oriented courses conducted by Outward Bound for schools as well as in the group initiative tasks and other group problem solving situations of a standard course the "discovery method" is often employed. This method of course relies on a student's motivation to discover rules and laws that govern the solutions of uncertainties and complexities. It is based on the presentation of arousing stimulation to a student and the utilisation of his motivation to discover the rules that are useful in reducing the uncertainties. This method is basic to the Outward Bound philosphy which encourages the utilisation of the fundamental drive to search and learn for oneself and is built on the hope that the student who learns rules by the discovery method will continue independently of a school or Outward Bound course situation, to discover and learn and use new rules.

It similarly assumes that the more adventurously the pupil participates and manipulates what he should come to understand, the more he learns and the more flexible are his concepts likely to be.

This link between motivation and discovery learning is particularly important to Jerome Bruner. He suggests that "(20) to the degree that one is able to approach learning as a task of discovering something rather than 'learning about it', to that degree will there be a tendency for the child to carry out his learning activities with the autonomy of self-reward or, more properly, by reward that is discovery itself".

Although theorists such as Bruner speak very enthusiastically of discovery learning and its effects on intrinsic motivation, its potential for transfer and significance in the learning process, the unfortunate fact is that research evidence provides little positive support for these theories. Although we must therefore be careful to not become carried away with the enthusiasm of theorists I nevertheless contend that when used in particular ways discovery learning is significant in the Outward Bound learning process.

17/...

Clearly the exposition method of learning is more efficient for some things in terms of time and resource use, than discovery learning. However equally clearly, the learners attitudes towards the subject matter and learning situation may be as important as what he learns in the cognitive sense. It is interesting and challenging for most students to discover, particularly if their efforts are successful, or at least intermittently successful.

As Outward Bound schools' programmes usually both take students away from their schools but at the same time integrate the subject matter of the ongoing school curriculum into the Outward Bound programme there is a double effect possible. The student is lifted out of set patterns of learning while at the same time his new learning experience is directly relevant to the continuing programme at his school.

Under these circumstances the prospects both of the success of the discovery learning approach and of its cognitive and motivational transfer are maximised.

Schools programmes designed by Outward Bound centre on using the environment and adventurous experiences in the field as the source of data and lead students into observations and information collection.

By carefully grading the programmes each student may have a level of success and so come to feel that he is more able to control his actions and environment. (Certainly more than he can in a normal school routine). This can lead to a new satisfaction from the learning experience and give the student more confidence in exploring other learning situations.

Suchman (21) well explains this process as one in which discrepant events are suddenly rendered meaningful and able to be assimilated with what is already known and understood and so release tension and give a feeling of closure and satisfaction.

18/...

This description of the cognitive aspects of the discovery learning approach of Outward Bound programmes has a close parallel in the more affective domain of a standard course for 17-25 years old men & women. The only difference being that the emphasis in the case of the older students is more on "the self" as the subject matter of the learning experience. Hence the relevance of discovery learning to one of the most fundamental principles upon which Outward Bound is founded, i.e. that knowledge of self comes best and with fullest understanding if it comes through experience.

Outward Bound programmes are structured in an attempt to provide experiences through which each individual may be better able to discover solutions to those many and continuous questions that face the adolescent and young adult. Students are guided through these programmes by instructers skilled in providing both a nurturant and increasingly challenging atmosphere in which there is an increasing independence of action transferred to the participant. Hence during a standard course, from a brief, initial receptive learning position the student is eased quickly into a guided discovery learning position.

It is unfortunate that in this area in particular there is a dearth of research on which to draw to support what must remain essentially subjective and intuitive evaluations of the merit of the guided discovery approach followed by Outward Bound in its various programmes.

However even Ausubel (22) whose approach to discovery learning (and especially Bruners work), is little short of cynical,concludes that "discovery techniques are valuable for acquiring desirable attitudes towards inquiry and that it is also reasonable to suppose that successful discovery experience is a generator of intellectual excitement, motivation for sustained problem solving and creative thinking,and enhances the individual's feelings of confidence in his own abilities".

19/...

It would seem then that discovery learning techniques generally are appropriate to Outward Bound training.

CREATIVITY, PROBLEM SOLVING & EDUCATION FOR FUTURE

It has already been made clear that the primary thrust of Outward Bound is towards each student learning more about himself and his personal/social world rather than learning any particular technical or academic skills. Hence Outward Bound has the advantage of having a subject matter that is of powerful inherent interest to its students as all people, and particularly young adults and adolescents, are intensely (albeit often guardedly) interested in themselves. However this intensity of concern and interest often provokes a dilemma. For as Rubin (23) points out "Humans are strongly motivated by a desire to explain questions dealing with their milieu. This drive, unhappily is as well satisfied by a false explanation as by a correct one. Our compulsion for omniscient instruction, providing answers for all questions, has resulted in an unwillingness to deal with unknowns".

The very basis of Outward Bound instruction is on placing students into positions wherein the only resources they have available to overcome entirely new problems are only threefold, a) some basic skills b) other group members for whom the situation is equally new and often bewildering and c) themselves - their initiative, resourcefulness and determination to find a solution.

Expeditions through mountain areas, down rivers, into caves and over cliffs are all designed to thrust the student into the unknown.

This is one of the fundamental differences between Outward Bound education and general education. Today's general education, i.e. the educational experience all students who come to Outward Bound have experienced up to that time, has emphasised mastery of the known, it does very little to prepare an individual to cope effectively with the unknown. The basis of Outward Bound's educational philosophy is that to cope effectively with the unknown, an individual must

20/...

first of all know himself and then have developed the ability and inclination to think into the unknown. This principle is seen as basic to the future life of the individual. A future in which he then can become master of his knowledge instead of its prisoner.

Without this approach any education is destined (24) "to produce adults who will eventually become crippled by their own absolute patterns of thought and by knowledge that is no longer relevant, to become confused and then overwhelmed by a vastly changed future society in which they will no longer know how to participate".

Hence the development of creative thinking may be seen throughout Outward Bound programming and not just in sections involving group initiative tasks or group problem solving.

It would seem that the very conditions of a standard Outward Bound course are condusive to development of creativity. Authors such as Fromm (25) and Guilford (26), for example, both point out that the ability to accept stress and conflict is part of the structure of creativity although other psychologists follow more the Fruedian approach which suggests just the opposite, i.e. that it is the desire to relieve the tension of conflict that is the source of creativity, both views can equally be seen to underly Outward Bound's prospect for development of creative thinking. Rubin (27) looked at these theories and points out that they "stress the learning impetus which young children derive from their innate tendency to explore unknown situations, to seek challenges which tax freshly won skills, and to deliberately find problem situations at the edge of their capacities. This principle suggests that the mature student should similarly be involved in intellectual activities which animate his curiosity, which require him to deal with the challenging and the unknown, and that instead of carrying on his work in situations free from tension, he should purposely be thrust into a controlled study environment with built-in stress".

21/...

The environment used by Outward Bound is very free from social and civilised embelishments and aids. It is almost entirely an outdoor programme in which physical demands are heavy and social understanding and co-operation necessary. Under these circumstances there is considerable stress, as well as very open and honest feedback to each individual. This feedback comes through his fellow group members on a social plane and through his own successes and failures on a physical, psychological and organisational plane. The motivational qualities we have already seen, tend to be high, as do the prospects for self-actualisation. These underlying conditions seem also to be condusive to creative thinking.

Crutchfield for example (28) makes it clear that he believes that an essential quality for creativity is openness to contact with the fullest reality. While Maslow (29) asserts a connection between motivation and creativity and also suggests that growth motives lead to self-actualization and that the self-actualised person is a creative person.

Outward Bound programmes, may then be seen to have many qualities which psychologists and educationists see as pre-determinants of creativity and its development. However any success Outward Bound has in the stimulation of creativity is at least equally influenced by Outward Bound's effects on curiosity which in itself can be seen to be closely related to the aspects of arousal and motivation discussed earlier.

Day & Berlyne (30) suggest "that there are many potentially creative people who simply do not have the motivation to fulfill their potential. There are people who have the abilities but have failed to develop the enquiring mind, which is dependent upon a positive attitude towards novelty and complexity. Simply stated, they are uncurious". They go on to point out that "a number of studies (**) of curiosity development point to the discouraging fact that curiosity seems to diminish with exposure to the traditional school system... yet curiosity is a necessary condition for creativity. One must alarmingly conclude that though

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(**)See for example the reports by Torrance (1962), H.S. Sullivan (1953), Wilt (1959) - quoted in Nash, J.; Developmental Psychology: a Psychobiological Approach, Prentice Hall International,NJ., 1970.

22/...

we treat creativity as a goal of education, by failing to reinforce curiosity we fail to reinforce creativity.

The Outward Bound environment, with its high arousal characteristics, entirely different social and physical environment and its natural demands for full student involvement has many advantages for arousing curiosity over the traditional school situation. Consequently the programme should have better prospects than normal school or work experience for stimulating creativity.

Torrance (31) summarises from his review of the literature, five conditions that are necessary to the proper functioning of the pre-conscious mental processes that are said to underlie creativity:- 1) The absence of threats to the self and the willingness to take risks 2) Self-awareness, appreciating one's own feelings 3) Self differentiation, or awareness of distinctiveness 4) Openness to the ideas of others together with confidence in one's own ideas and perceptions of reality 5) Mutuality in interpersonal relations, or a balance between sociability and pathological associability.

It is simple to see the similarity between these processes and the aims of a standard Outward Bound course however, unfortunately it is not as simply concluded that Outward Bound therefore produces creativity as there are many other variables which must be taken into account in determining the eventual outcomes of a 26 day course. One of these other variables is anxiety.

ANXIETY AND THE OUTWARD BOUND EXPERIENCE

It has been stated for example that "(32) anxious people are less motivated by curiosity and do not evince as much interest in exploring new arenas and in having new experiences". We have already seen, however, that students on a standard Outward Bound course are impelled into many new experiences and are in a heightened state of arousal throughout the programme. If we then review the statements of Hebb (1955) and Freud and agree that a state of anxiety is recognisable by a high level of arousal,we can assume that high anxiety states may be expected. This would seem to place a highly anxious student (whom

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Penney (1955) suggests tends naturally to be low in curiosity and adventurousness) in a position which would seem to mitigate against any gains in development of creativity.

On the other hand in a recent study by Koepke (1973) (33) on the effects of an Outward Bound course on anxiety levels she found that students generally possessed lower anxiety levels at the end of a course.

It would appear that an Outward Bound course has prospects for increasing anxiety, lowering anxiety and more importantly providing a "place apart" from normal patterns of life and so establishing the prospect of re-constructing anxiety and response patterns.

Hence assessment of the role of anxiety in the Outward Bound experience is difficult largely as a result of the complexity of the anxiety patterns of the students, or more specifically their anxiety trait (A-trait).

Sinclair (et al) (34) illustrate the problem in pointing out that "A-trait, is conceptualised as a category for threat recognition which is stored in memory. This category reflects each individual's own unique past experience, and has implications for his perception of future situations inasmuch as it determines whether or not a stimulus situation is recognised and responded to as threatening. If a search of the stimulus results in the perception of threat, then that situational stimulus is transformed into cues for anxiety state (A-state) responses".

This trait-state theory then assumes that the individual who perceives a particular situation as threatening will respond to it with an increase in A-state, irrespective of the presence or absence of any real objective danger. The intensity and duration of this A-state reaction will be determined by the amount of threat perceived in the situation and the persistance of this perception. Hence each individual's perception of threat is dependent on

24/...

his own appraisal of the situation, (largely, determined by his past experiences).

One of the most valuable contributions Outward Bound can make to a person who may have undesirable responses to anxiety is to provide "a place apart".

For example many students suffer at school from anxiety in test and test-like situations in the classroom. Sarason (et al) (35) suggest that anxiety reaction in these situations are "the outcome of previous test-like experiences in which the child's behaviour has been evaluated by significant others. Familiar reactions, especially from parents, help shape the child's conception of himself as a performing individual so that when he passes into school with its test and test-like experiences there is a psychological similarity to the evaluative experiences he has had at home. In similar type situations at school therefore, anxiety responses similar to those elicited in test-like situations at home are produced.

The standard Outward Bound course has no competitive or evaluative element other than that which is subjective and related to and evaluated by the student himself.

Even in activities such as the cross-country run and marathon, times are given to the student to assist him to evaluate his own performance, but results are not promulgated in any ranking order. Similarly no skills achievement is evaluated by the school but instead each set of skills is used by the student in pursuit of his own aims whether they be completion of an expedition, mastering a ropes confidence course or attending to a first aid situation.

Consequently the Outward Bound student finds he is faced with an entirely new set of expectations and finds himself in a situation where there are no absolute standards and few judgemental expectations and so "test-situation" reactions and anxieties are irrelevant. A similar example of the way in which Outward Bound can be "a place apart" is in areas of ego-involvement related anxiety. A recent study (Sinclair 1969) showed evidence that in test situations

25/...

attempts to increase the level of ego-involvement will raise the level of performance of low-anxious students but will not do so for moderate or high-anxious students. (36)" This conclusion suggests that the widely adopted practice in education of attempting to motivate students by placing strong emphasis upon the importance of examinations and the need to do well and avoid failure will be of value only to low test-anxious students. "In the Outward Bound programme there are no grades, accolades or positions of prestige which can be achieved. Instead each student is encouraged to strive towards identifying and then attaining his own personal unique potential. This potential has various dimensions, such as physical, organisational, social and psychological, but all are evaluated by the student himself, there are no examinations and no failures and so little place for strong ego-involvement inspired activities. Indeed should excessive ego-involvement motivation be perceived by others to be dominant or emerging in an individual it is almost certainly spontaneously discouraged by the peer group in this particular social/psychological climate.

The importance of Outward Bound as'a place apart' in which normal responses may be re-constructed can be seen through "coping styles". (37) "Coping styles are overlearned strategies for information processing - patterns of responding previously associated with threat reduction. Once a coping style is activated, it may affect in important ways other ongoing cognitive processing and behaviour. It will also have a direct influence on many aspects of the problem-solving process. At the level of primary appraisal, coping styles will influence the cue search and evaluation processes of structuring the problem, and at the level of secondary appraisal they influence these same processes as an appropriate strategy is selected and then applied in task performance".

Consequently coping styles can be seen to be the individual's unique perception of threat and his attempt to overcome it. Sometimes he may have developed very effective and personally satisfying coping styles and other times not. However as they dictate much of his action and his actions dictate the way in which people relate to him and the way in which he handles his own world of affairs, coping styles tend to have all the elements of self-fulfilling prophesy. There

26/...

is, in normal life, little opportunity to break through this pattern. However at Outward Bound with its entirely different social,physical and psychological milieu and provision of opportunities such as the three days period of solitude called "solo" an opportunity to reassess in a situation outside the normal pressures that keep people locked into set patterns, is provided.

There can be little doubt that an Outward Bound course presents very many potential A-state situations, ranging from meeting new people and physical strain and risk situations such as white water canoeing or abseilling, to conceptual and emotional situations such as spending three nights alone on a mountain top or setting out on a final expedition into unknown and rugged country with a small group of others. However anxiety in itself need not be destructive, indeed a mild degree of anxiety appears not only to facilitate learning but also becomes a pre-requisite to it.

It might, nevertheless, be wondered why the high-anxious-trait person who might be likely to interpret many Outward Bound situations as high-anxious state provoking, can complete the programme at all. The answer to this question lies in the difference between "stress" and "threat". The Outward Bound situation is stressful, not threatening (38) "Stress, here, refers to variations in environmental conditions or circumstances that are characterised by some degree of objective danger. Threat, refers to the subjective appraisal or interpretation of a particular situation as ominous or dangerous".

It is clear that very many of a person's anxiety patterns, whether he might be called a high, moderately or low anxiety trait person, or how he perceives anxiety states, or the coping styles he develops, are all dependent in essence on a subjective (albeit sub-conscious) evaluation of himself. This link between anxiety and the self-concept is the most likely area through which Outward Bound may create the possibilities for anxiety pattern re-structuring to take place. Through a re-evaluation of the self-concept and then the opportunity, in "a place apart" to break through established patterns it would appear that the Outward

27/...

Bound experience could be expected to have an influence on anxiety patterns.

OUTWARD BOUND EFFECTS ON SELF-CONCEPT

Klausmeier and and Ripple (39) illustrate the source of a problem often observed in students aged 17 to 25 years as well as in students on schools courses with Outward Bound, when they point out that "by the time the student finishes high school, he should have a fairly realistic appraisal of himself, his motor skills, his knowledge and intellectual abilities, his interests, and his emotional make-up. One of the weaknesses of our total education programme, including the college level, is that we do not give enough help to students in understanding their strengths and weaknesses. Often a counsellor makes an adequate appraisal of the student's assets and limitations and uses this for placing him in various curricula and classes. However the information on which the appraisal is based is not interpreted to the student, so that he himself can understand the strengths that he may capitalise on, weaknesses that he may overcome through persistent effort, and possible limitations that he cannot overcome but must accept. Besides these inadequacies in encouraging self-understanding, there is even less deliberate attempts to encourage self acceptance and self acceptance is the primary requisite for an adequate self-concept. Further, acceptance by others and acceptance of others is positively related to acceptance of self. One cannot determine which is cause and effect. Since this is the case, it is well to work on all of them simultaneously".

This is precisely what Outward Bound attempts to do. By placing students in an environment which brings them into confrontation with their physical limits and social abilities, while at the same time developing a nurturant and non-evaluative ethos. This stimulates very real feedback to the individual on his own weaknesses and abilities as well as his relationship with others. It is important, to note that through the effects of the dynamics of a group working together under difficult conditions to overcome common problems and achieve joint objectives, this feedback is almost entirely constructive.

28/...

The problem pointed to by Klausmeier & Ripple tends to be one more of degree than absolutes. Indeed there seems to be good evidence from a recent study of Sydney youth between the ages of 12 and 20, for suggesting that Australian teenagers "(40) assess themselves, in general, as having a satisfactory to high level of self esteem, itself subject to no great amount of fluctuation of instability.... (41) A case supporting the existence of a teenage crisis of self identity during these years, or referring to pronounced psychological change at certain ages, can clearly receive little general support from the present data". If this research has yielded results typical of Australian youth it would appear that the problem is one of qualifying both the nature of this reported stable self-concept and the utility and appropriateness of it to a young persor engaged in the process of constantly changing roles, obligations, responsibilities, career directions and social relations. The self concept reported adequate in the present time for a teenager, may prove entirely inadequate in a few short years as a young adult. Consequently the broadening of the possibilities of honest insight into self is a major and valuable endeavour of Outward Bound even for the most stable young man or woman. It may have even more value in some ways for the "(42) important minority of Sydney teenagers who do not share this self assurance or apparent self-sufficiency, and who in various, but related ways are much more negative in their self feelings".

The importance and value of an Outward Bound course as a "testing ground" for the self-concept can be readily seen in a look at the process by which the self-concept is developed.

From infancy the human organism interacts with its environment. During this process the person gradually builds up concepts about himself in relation to his environment through interactions or experiences. As he grows into maturity these experiences come to have values attached to them. He then begins to perceive himself as a psychological object. The significance of this situation is emphasised when we note that (43) human beings have certain physiological needs for objects and activities necessary to sustain life or to facilitate the

29/...

organisms's characteristic development. Consequently the interpretation of experiences can be seen as a series of hypotheses about experience, related to the individual's needs. These hypotheses, or perceptions are tested and re-tested through experience. "(44) Thus the world comes to be composed of a series of tested hypotheses which provide much security. It acquires a certain predictability upon which we depend. Yet mingled with these perceptions, which have been confirmed by a variety of experiences, are perceptions which remain completely unchecked. These untested perceptions are also a part of our personal reality, and may have as much authority as those which have been checked".

The importance of having suitable opportunities to "check" self perceptions and the value of an Outward Bound course as a potential opportunity to fulfill this function are clearer when we observe the importance of the "self" to young people in their adolescent and young adult years.

Staines (45) looked at this question and found results that not only showed that people are very much concerned about the self (self-centred) but that this concern increased with age. He theorized that as the child developed his "Self" so he would tend to use it more frequently as a referent. He quotes a study by Fisher (46) who found with pre-school children that 33% of their comments were related to the self. Another study, by Henle and Hubble, with adolescents and adults found 40% of self-referential comments and in one of the Staines own studies he reports that over 90% of comments related to self. He goes on to make another important point when he suggests that (47)"it seems clear that the self facilitates or inhibits learning by generalisation or transfer to new situations".

The significance of the self-concept becomes increasingly obvious as a person matures, for once the "self" has been established, experience thereafter, is very much interpreted in terms of that self. Hence perceptions which are meaningful to the individual largely derive their meaning from their relation to the concept of self already in existence. Lecky states the situation forcefully in saying

30/...

(48)"We perceive in ways that are consistent with our concepts of self. A given phenomenal self perpetuates itself by permitting only such perceptions as are consistent with its already existing structure. People limited by their self perceptions behave in ways that seem to corroborate the self concepts they already hold. They seem almost to be asking for proof of what they feel about themselves, and indeed they often get just what they ask for".

The real dilemma and problem comes when we realise that these perceptions about self are the foundation upon which behaviours are built. Rogers (49) points out that "the organism reacts to the field as it is experienced and perceived. This perceptual field is, for the individual reality. (50)The reaction is not to reality,but to the perception of reality. Often of course, the perception has a high degree of correspondence with reality, but it is important to recognise that it is the perception, not the reality , which is crucial in determining behaviour".

If these views are correct then the implications are enormous as we would have to view each person in terms of his own self-fulfilling prophecy.

Under these circumstances Outward Bound tries to drive a wedge between self and perceived self, between reality and perceived reality. It does this by bringing the person in rapid confrontation with a series of demands that give clear feedback to the participant. The circumstances are different to previous experience. He is stripped from contact with normal defence machanisms, coping styles, routines and relationships, and any other devices behind which he may previously have been able to shelter from reality. If a person is standing on the edge of a cliff and needs to step back off it in order to abseill, he is confronted with a situation that must be resolved. His consequent action cannot escape realistic self evaluation. Similarly in a social plane, if he cannot co-operate with others to achieve a common task his social difficulty is far more obvious to him than in normal society where, systems, instructions, hierarchical positions or some other reasons can be used to explain his failure. It should be remembered however that the reference group in which the student is operating is essentially a nurturant peer group and so has a powerful

31/...

positive influence on his interpretation of his own and their feedback on any behaviours.

When we consider that one of the most basic assumptions underlying theories about self is that the concept of self is a product of social reactions, or more specifically, that development and change in the self concept are direct functions of the response of significant others, we can understand the powerful force an Outward Bound experience can have on a student's self concept.

In particular it has prospects of providing an ideal and intensified opportunity for resolving incongruities between the self concept and ideal self concept. This is particularly so for the 17-25 year age group for whom the ideal self concept is becoming a more powerful influence on them as they take more responsibility for their own actions and attempts to determine their future goals and life directions and try to resolve those vexing questions "what type of person am I? What do I want to be?".

The concept of "self" is complex and liable to many internal contradictions and confusions. It is possible for example for a person to simultaneously hold both an actual self concept and an ideal self concept. Similarly within the actual self concept he may hold clear ideas on his social self concept as well as a private self concept, or, his "own ideal-self" concept and "others' concept of the ideal me". Unfortunately, however,more often than not the person finds these concurrent concepts confusing and incongruous and so he attempts to resolve them into a simpler formula. His success in doing this relies on how close his perception of reality comes to reality itself.

The Outward Bound programme is designed to maximise this process. Its concern with real situations and open, honest reactions encourages a breakdown in the need to preserve approval of others by behaviours inconsistent with his self concept (a process which normally widens the gap between self concept and ideal self concept).

32/...

Evidence of the success of Outward Bound in this regard seems to be found in the study by Keopke (51) which examined changes in self concept on a Colorado Outward Bound course. She found significant changes towards smaller real-ideal self-concept discrepancies following the course. She concluded that at the end of the programme, the participants viewed themselves more positively, and their perceptions of what they were, more closely approached what they would like to be. Clifford & Clifford (1967) (52) in another study of this type with Outward Bound also concluded that "overall change in the self-concept did take place in the appropriate direction and discrepancies between the self and the ideal-self were reduced".

It is possible that what Outward Bound is fulfilling are the conditions outlined in Roger's XVII proposition (53) that "under certain conditions, involving primarily complete absence of any threat to the self structure, experiences which are inconsistent with it may be perceived, and examined, and the structure of self revised to assimilate and include such experiences".

The important essence in fulfilling this condition in the Outward Bound environment is ensuring that conditions of stress and challenge into which the students are constantly impelled, remain stressful and challenging, but not psychologically threatening.

This is often a delicate situation in which the hopes of the Outward Bound programme are to bring the student into situations of confrontation with himself and in a position to receive realistic and honest feedback both from his own perceptions and the reactions of others, while at the same time trying to ensure that the student does not perceive them as threats to the integrity of self.

Rogers in his XVI proposition (54) points out the danger of this situation in saying, "any experience which is inconsistent with the organisation or structure of self may be perceived as a threat, and the more of these perceptions there are, the more rigidly the self-structure is organised to maintain itself".

33/...

Should this position be adopted, of course, the prospect of personal growth is very limited indeed. Maslow seems to think that this position is very common. Taking an essentially Freudian line, he suggests that (55)".....Fear of knowledge of oneself - of one's emotions, impulses, memories, capacities, potentialities is very often isomorphic with, and parallel with, fear of the outside world. That is, inner problems and outer problems tend to be deeply similar and to be related to each other. In general this kind of fear is defensive, in the sense that it is a protection of our self esteem, of our love and respect for ourselves. We tend to be afraid of any knowledge that could cause us to despise ourselves. We protect ourselves and our ideal image of ourselves by repression and similar defences, which are essentially techniques by which we avoid becoming conscious of unpleasant or dangerous truths".

At first look this would appear to present a formidable barrier to the achievement of Outward Bound's aims of bringing the individual to a fuller understanding of himself as a base from which may take place a greater fullfilment of his potential. However Maslow makes it clear that there is a force which can break through this barrier, and which, given appropriate circumstances strives apontaneously to break through it. This force, motivated by desire to see reality as it actually is, (even if it occasionally hurts), is also very much aligned with Maslow's concept of self-actualisation.

An interesting study of this question of stress, challenge and fear and the way in which it may, in the course of an Outward Bound programme, lead not to defensive reactions but instead to personal understanding and growth, was made by David in 1972 (56). He looked at the relationship between fear during rock-climbing on an Outward Bound course and self-actualisation and concluded that the overcoming of fear resulted in new levels of self awareness and self-confidence. He stressed that this fear has to be faced and overcome, and then transformed into enthusiasm before self awareness and self actualisation were increased.

34/...

There is growing evidence that such a process of self-discovery and action, activated may become the once/nutrient for its own growth. A recent study by Hendy (57) analysed (among others) the factor of self-assuredness during and following an Outward Bound course. He concluded that from the results could be drawn the inference that over the six months following the course, the experimentals had become more self knowledgeable and more self assured. They knew better who they were and had a better idea of what they can and cannot do.

Further evidence by Richards (1966) (58), who found strengthened self images following an Outward Bound course; Wetmore (1972) (59) who found distinctive positive change in self concept at the end of an Outward Bound course; and Smith et al (1975) (60) who found effects on participants levels of self esteem; are only indicative of the increasing awareness that those involved in Outward Bound, have of the importance of the honest revelation and real development of the concept of self,in the philosophic and psychological structure and aims of an Outward Bound Course.

INTERDEPENDENCE OF VARIABLES INFLUENCING AFFECTIVE OUTCOMES OF OUTWARD BOUND

Although the concept of self stands as a central factor in assessing the impact of a standard Outward Bound course it will have become clear by the preceding discussion that during a 26 day programme each student encounters a complex and intensified experience in which the normal interdependence of variables in everyday life is more open to observation.

We have already seen the relationship between arousal and motivation and the link between arousal and anxiety. Some of the effects of anxiety on curiosity and of curiosity on creativity and self-actualisation have been discussed. Similarly discovery learning has been seen as an adjunct to creativity and self-actualisation, while self concept has been seen as a major underlining variable with influence on, and being influenced by, almost all variables, including anxiety, creativity, self-actualisation, motivation. The conclusion we can then draw is that the individual person is an integrated unit within whose structure are many self fulfilling prophesies which collect their own

35/...

evidence from the nature of the interdependence of the variables making up the unit.

It is on this assumption that Outward Bound programmes are designed. It is recognised that to effect an individual in any meaningful way Outward Bound must present a comprehensive programme which may touch many aspects of the personality concurrently. It is also recognised that in a world of social and commercial sophistication an effective means of breaking through the social peripheral reactions and commercially induced insensitivities to experience is by i) creating situations of real and intensified personal experience and ii) these situations are better created in as natural a setting as possible so that reactions and feedback spring from a more natural and basic level, less cluttered by the effects of socialisation.

Hence the programme is constructed in a wilderness environment and includes rock-climbing, caving, white water canoeing and rafting, bushwalking, camping out, navigation etc. However in order to present as integrated and comprehensive a programme as possible in the twenty six days available, the activities range from each person keeping a personal daily journal, to climbing 70 feet up a small (6 inch wide) wire ladder in an exposed position; from standing up and speaking in public and preparing topics for discussion, to squeezing through an impossibly small hole in pitch blackness 200 feet underground; from planning menus and logistics arrangements with eleven other students from a wide range of backgrounds to three days isolation on a mountain top; from washing up and preparing meals for large numbers to running a 15½ mile marathon at the end of final expedition, a time when the body and mind want to reject any further effort.

The hope of such a complex, fast moving and diversified programme is that it will allow the individual to reassess himself on suffieient variables within a short period of time that the very interdependence of variables may become a force for change(should it be perceived desirable by the individual) rather than a force for conservation of a possibly less satisfactory self structure.

36/...

A further hope of the programme is that as a result of the method by which any change may have occurred, i.e. through self-evaluation and self discovery following honest feedback and real insights, the student is likely to experience a greater sense of personal worth and competance. Outward Bound relies, on its standard courses, on this new awareness of the individual having a lasting effect and is why in Australian Outward Bound a person may only ever do one standard course in his or her life time. Further, there seems good reason for assuming that the sense of "control" or"competence" experienced by the participant at the end of a standard Outward Bound course stands him in a good position for many situations in his normal life.

Nardine (61) for example points out that a most important dimension associated with the construct of competence is "an individual's self-confi ence or sense of being competent and able to cope. This sense of competence permits the individual to enter and explore new situations, new areas of learning, and skill development".

The ramifications and significance of this result in education are obvious.

COGNITIVE ASPECTS OF OUTWARD BOUND PROGRAMMES

An interesting area for consideration regarding the effects of Outward Bound is to be found also in the area of cognition.

All educational institutions seek meaningful learning for their students. The major difference between an Outward Bound school and a traditional school is the subject matter to be learned. Although at an Outward Bound school students may be taught skills in canoeing, or abseiling or camp cooking, at the end of 26 days the teachers at the school would be little concerned about the retention of knowledge of the skills or information on the 27th day. In the Outward Bound context these skills are only tools, which allow for the development of techniques of understanding, and personal conceptual growth. It is seen as particularly important that such a concentrated opportunity to look at the methods of learning rather than the facts of learning should come in the adolescent/young adult period of life.

37/...

It is during this period that there is an increasing need to find ways of handling concepts. For the first time the individual is capable of conceptual introspection, of objective observation of self. This brings conflicts between ideals and reality. Theories are considered and accepted but need testing. Realities are observed but so often do not appear to follow theory. Somehow the time must be resolved and one of the greatest struggles any individual will go through in his life time is this period in which he begins to accept reality, and accept limitations. Inhelder and Piaget (62) would almost seem to have the Outward Bound experience in mind when they suggest "The adolescent becomes an adult when he undertakes a real job. It is then that he is transformed from an idealistic reformer into an achiever".

This view obviously follows Piaget's general view that all cognitive operations have their origins in actions, be they perceptual, intuitive or physical. This position has led to the much discussed prospects of enrichment and acceleration. It has been suggested that an educational programme which actively encourages interaction with, and manipulation of, the environment, and stimulates social activity and provides an abundance of opportunities for cognitive activity, may not only lead to meaningful learning but also an acceleration of intellectual development.

These aims and methods clearly align with Outward Bound. Unfortunately evidence on outcome is lacking as a result of little research in this area.

One of the most important considerations in cognitive development must be the individual's stage of cognitive readiness (62)" There is little disagreement about the fact that cognitive readiness always crucially influences the efficiency of the learning process and often determines whether a given intellectual skill is learnable at all at a particular stage of development". It is in this regard that Outward Bound has much to offer. As it places little importance on subject matter, as groups are kept small (usually 12 in number) and there are no absolute standards set, the Outward Bound programme provides a good opportunity for the individual to assimilate and accomodate within his own

38/...

stage of cognitive readiness. The difficulty of being able to do so readily in the more normal school setting is seen in the following results reported in a recent study into Sydney Youth.

Normal schooling patterns and age grading assumes an essentially stable cognitive development. However in secondary schooling and especially in the early years of high school, students are (according to general Piagetian theory) passing from the concrete operations stage to formal operations.

The evidence of Connel et al (1975) (64) found that at age 19-20 years only 38% of males and 35% of females responded at the formal level of thought; at age 13, 15, and 18 years the percentage of school pupils scored as operating at or below the level of concrete thought fell sharply from 75% to 46% to 18%. At these same ages, the percentage scoring at the highest level of formal thought increased from 10% to 25% to 54%.

This evidence points up the great advantage of an upgraded, personal experience as a meaningful education experience for young people in this age range. It also points out some of the advantages of Outward Bound schools' programmes in which the activities require both active participation and academic consideration.As a consequence they provide greater opportunities for the "slower" learner to feel fully involved and of worth in the process, while at the same time do not retard the challenge for the student at a higher state of cognitive development.

Another important feature of the Outward Bound experience is its microcosmic nature. For many students it is an experience not only representative of many they have and will face but also is something of a "first encounter" with real life experience outside the security of school or home or social clique. Lovell illustrates the importance of this experience in stating that (65)"the cultural milieu, climate of opinion, or the general experience to which the person is subjected is of the greatest importance in developing thinking skills".

39/...

It would appear likely that the encapsulated, and intensified experience at Outward Bound, coming as it does at a time of transition into a "formal operations" stage of cognitive development, may be particularly valuable. The prospects of this may be more fully understood from a quick view of the cognitive developmental process (***).

"(66) From infancy to adulthood, the person is assimilating data from the world around him, accommodating to the world around him, and organising his knowledge and experiences into a system or structure. Piaget stresses this active organising (or equilibration) as the most important force in the person's cognitive development. Other recognised forces are maturation, experiences with the environment, and direct teaching by other people. Through the process of equilibration - a form of self regulation - the organised system or cognitive structure, is constantly changing, enlarging, and re-organising as more experience with the world and with himself presents the person with ideas and events that must be assimilated or accommodated to". We see then that during the course new disequilibria arise from the demand of new problems which are beyond the reach of solutions from previous levels of equilibrium.

Hence the significance of experience is clear as "(67) every cognitive interchange with the environment involves both accommodation and assimilation and every instruction from without pre-supposes a construction from within".

The way in which human beings internally represent their experiences and how they organise and store these representations for future use interests theorists but unfortunately is beyond the scope of this paper. However it would seem that evidence may be found from most theorists for suggesting that a new and challenging and intensified experience such as that provided by Outward Bound may be significant in stimulating cognitive growth.

Bruner (1959) and Elkind (1961) (68) for example suggest that "intellectual development may be conseived as a kind of Toynbeean challenge - response affair; at selected points in his development the person is thrust into new roles

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(***)Following essentially Piagetian lines.

40/...

with new and different sets of cognitive demands; the person responds to the challenge by acquiring the new cognitive structures needed to cope with these demands".

It is during adolescence and young adulthood that we have seen these new demands and roles are both most numerous and most important for the individual. Elkind (69) reinforces this view in suggesting that "the appearance of new mental structures in adolescence helps to account for many of the experiential and behavioural characteristics of this age period". This may be seen as further evidence of Outward Bound having value as a "place apart" in which some of these new structures may be sorted out, tried, and proven, before the person re-enters the pressures, demands, confusions and routines of everyday life in which attitudes or habits of thought may have been learned which interfere with reasoning. (A circumstance in which a young person may also attempt to cling to established patterns of reactions and thinking even when they are no longer appropriate.)

The question arises as to how much any programme seeking to modify cognitive functioning might enhance a person's cognitive flexibility. This obviously desirable goal, to provide each person with the ability to shift his cognitive approach in the face of changing task requirements, is one of the main aims of any Outward Bound programme, whether it be a standard course, a schools programme or an adult course.

THE QUESTION OF TRANSFER

One of the major difficulties in evaluating the long lasting effect of Outward Bound is the relationship between the areas of development so readily observed during a course and the transfer to the situation outside of the course. In the cognitive domain Ausubel gives us some guide to the probability of transfer in pointing out "(70) that past experience influences, or has positive or negative effects on, new meaningful learning and retention by virtue of its impact on relevant properties of cognitive structure. If this is true, all meaningful learning necessarily involves transfer because it is impossible to conceive of any instance of such learning that is not affected in some way

by existing cognitive structure; and this learning experience, in turn, results in new transfer by modifying cognitive structure".

The question of transfer however is certainly not clear. The "Formal-discipline" Theory is clearly no longer tenable although it is still common to see laymen draw the simple conclusion:"Outward Bound is hard therefore it must be good for young people". Of the other theories of transfer commonly discussed and investigated, the "generalisation theory" may be seen as the most appropriate to the Outward Bound circumstance. This theory holds that generalisations or principles are learned from a variety of experiences and that these generalisations transfer to and guide behaviour in new situations. While the "identical-elements" theory, in which elements in the learning situation need to be present in new situation for transfer to take place, has particular application to schools' programmes conducted by Outward Bound, the generalisation theory more fully covers the philosophic construction and aims of Outward Bound programmes.

Transfer by generalisation, which is essentially an extension of transfer by identical elements, takes a broader viewpoint and consequently "(71)the teacher is freed from attempting to teach a large number of specific facts and skills in many different subjects and so more interesting and meaningful concepts and principles can be taught".

The interpretation of results in the light of theory is however very difficult in this area. For example Gange suggests that (72) to the extent that an element which has been learned, be it association, concept or principle, can be directly employed in a new situation, transfer will occur. If the new context requires a behaviour substantially different from the specific capability mastered earlier, there will be no transfer".

Bruner on the other hand, subscribes to the broadest theories of transfer of training. Bruner believes that we can have massive transfer from one learning situation to another. He suggests that broad transfer of training occurs when

42/...

in the structures of subject matters one can identify fundamental concepts or principles which, once learned well, can be transferred both to other subject matters within that discipline and to other disciplines as well.

This view of course bodes well for the prospect of transfer from the Outward Bound experience. In order to enhance the prospect of this occuring the Outward Bound programme includes such activities as morning talks wherein some generally inspirational and broadly life-centred and appropriate philosophy related to the experiences students are encountering, is offered as something for students to think about. This is done in an attempt to assist in the process by which students synthesise their conceptual insights and produce self-relevant formulae for future action in related circumstances. It is hoped that procedures such as these will maximise the prospects of positive transfer.

It may consequently be seen that much of the Outward Bound programme is designed almost self-consciously towards teaching for transfer.

Trow would seem to be supporting the soundness of this approach in pointing out that "(73) we can hardly depend on the transfer of learning from traditional subjects, even when they are well taught, to enable young people adequately to meet the life situations that confront them".

Unfortunately at the moment there has been little research in this area and so little quantitative data to reinforce intuitive feelings and subjective reports that transfer does occur from an Outward Bound course into the broader field of life. However it is not irresponsible to suggest that changes in self-concept, anxiety patterns, identity evaluation etc. which may take place on a course have good prospects of transfer. In the meantime there has been a start made to investigating this problem of transfer. Smith (1971) (74), Rhoades (1972) (75) and Moses & Peterson (1970) (76) have all drawn conclusions from their own studies that have favourable implications for establishing evidence of an ongoing effect of Outward Bound. A most comprehensive report on 3,000 Outward Bound students over a five year period

43/...

based essentially on questionnaires and subjective evaluations, is that of Fletcher (1971) (77) who found that while 28% of students and 38% of sponsors felt that the influence of an Outward Bound course lasted for several years, 67% of ex-students and 50% of their sponsors believed that the course had an influence that would last for life.

Some Conclusions

Any investigation of the psychological bases of behaviour, or human development must of necessity be complex. Even when the circumstances are defined more closely, as for example by location and duration on an Outward Bound course the uniqueness of the educational, social, ethnic, cultural and economic backgrounds of students attending a course ensures that the task must be limited in the scope of the variables which can be analysed and the depth to which such analysis can be taken.

Although Outward Bound was established in 1942 its greatest impetus and greatest expansion in research has only come since the early 1960's.(****) Fortunately direct research into Outward Bound and its effects on its participants is now growing rapidly. However, much of the consideration and analysis of Outward Bound still relies on subjective evaluation by staff, sponsors and particularly students.

A study in this area is further complicated by the inexactness of the concepts of adolescence and maturity and the awareness that Outward Bound is dealing (on a standard course) with young people who are in a transition from an age and family role base to a position wherein he is located by factors

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(****) Significantly, since the inception of Outward Bound in the United States of America

44/...

such as social role, occupation and the need for a more individual independence and identity.

Outward Bound participants almost universally report their experience on the course as being very significant in their lives. This constant feedback is satisfying to an organisation whose name, "Outward Bound", signifies its hopes of being particularly relevant to young people who are about to leave the harbour of childhood and are "Outward Bound", on the voyage into adult life. We see this revelance clearly for the young person who in the 17-25 years age area is encountering many complex choices, has many developmental tasks to achieve and many decisions to make, at the same time as society is obliging him to take responsibility for his own actions.

It is the relevance of Outward Bound to the normal progress of life that enables it to claim to be able to make significant contributions to society and the future of man.

An Outward Bound course is designed to increase the prospects of its students taking responsibility for, and control of, themselves, through self understanding, and by providing opportunities for responsible and productive action and close involvement with his physical, social, and natural environment.

In looking at some more specific variables, and general theory and research which may help us to understand the processes occuring during an Outward Bound course, it can be seen that the "Force for Growth" model of motivation is probably most helpful. The programme also seems to maximise the conditions likely to increase the prospects of self-actualisation. Arousal is generally high and motivation intrinsic. Goals are almost entirely set by the participants themselves, either as individuals or in groups. No absolute standards are set but conditions for achievement motivation are well developed. Despite the challenges and demands of the programme, conditions for a sense of personal failure are minimised, hence goal setting behaviours are raised through incentive, and more realistic and higher levels of aspiration are likely to be set.

45/...

The concept of "adventurous learning" through guided discovery underlies Outward Bound teaching techniques and is seen as important in the development of intrinsic motivation. The consequent heavy emphasis on experience is also important to Outward Bound philosophy as it works on the belief that experience leads to the best understanding of self and that guided discovery learning techniques used in this intensive, but nevertheless nurturant, atmosphere of an Outward Bound course are likely to maximise the prospects of developing inquiry orientations and skills, and curiosity.

This is particularly important in a society in which there is almost a compulsion for omniscient instruction and desire to avoid the unknown. Unlike traditional education, which emphasises mastery of the known, Outward Bound education is based on the concept that an individual must first of all know himself and then develop the ability and inclination to think into the unknown.

This has significance for stimulation of creative thinking. The reality, stress, conflict and challenge of the Outward Bound situation can be seen as ideal conditions for development of creative thinking, curiosity and initiative.

Conditions on an Outward Bound course would also appear likely to generate high anxiety states, however most evidence suggests lower anxiety is experienced by participants after the course. This is probably as a result of the Outward Bound experience being stressful but not personally treatening.

Another significant feature of Outward Bound is that it provides a "place apart" from established patterns of behaviour and response to stimuli. This better allows a clearer view of self, and a pre-assessment by the individual of his behaviours, and especially his coping styles.

Outward Bound also works significantly in the area of the individual's self-concept by bringing each student into confrontation with his physical, social and psychological limits and abilities. However it does so, within a nurturant and non-evaluative environment. Through the more realistic self-evaluation

46/...

inspired by the course activities and the more honest feedback from peers, an Outward Bound course proves an effective testing ground for the self-concept at an age when interest in, and concern about, self, is considerable.

As concepts of self are built through experience, and once established influence all further learning and reactions to experience, the importance of the intensified and carefully controlled experience of an Outward Bound course can be seen.

The Outward Bound experience confronts each participant with inescapable realities about himself, and enhances the prospects of resolving incongruities between self concept and ideal self concept at a time when he is taking more responsibility for his own actions, and trying to establish his own identity.

This enhanced self knowledge forms a firmer foundation for any consequent process of self actualisation.

An Outward Bound programme can be seen as a uniquely intensive experience in which psychological variables and their interdependence are more open to observation. The integrated nature of the human personality demands that any effective programme aimed at personality or character development should be comprehensive in its aims and procedures. It is for this reason that Outward Bound programmes are designed to be complex, fast moving and diversified. This is in the hope that within a short period of 26 days, the participants have concurrent opportunities for feedback, re-assessment and development on sufficient variables that their very interdependence may become a further asset towards consolidation, or change, of the self structure and its consequent behaviours.

The de-emphasis of subject matter and irrelevance of age grading, and the emphasis on techniques for meaningful learning appropriate to the participants' level of readiness, ensure Outward Bound's relevance to the effective

47/...

cognitive growth of the individual.

The microcosmic nature of the Outward Bound experience ensures multivarious interactions with social, organisational and conceptual demands. This maximises the generation of demands for accommodation and assimilation and their consequent contributions to significant cognitive growth and flexibility.

Transfer from the Outward Bound situation into the broader field of a person's life may be best seen through study of the "generalisation theory of transfer" although the "identical elements" theory of transfer is obviously important in evaluating the effect of Outward Bound Schools' programmes.

Increasingly, recent studies have been finding evidence to suggest that an Outward Bound cause not only provides a significant experience for the participant which doing the course but has ongoing effects after completion of the course that may well last a lifetime.

It would seem that at last, clear and researched support is making more understandable what students, staff and supporters of Outward Bound have seen happening to the attitudes, behaviours, reactions and philosophies of young men and women who have completed Outward Bound courses since 1942.

That such an experience contributes significantly to the education and psychological development of young people in particular has been well testified. It has been the hope of this paper to try and understand a little clearer, why Outward Bound gains the acclaim it has and what psychological bases underlie its aims and procedures.

Garry E. Richards
August, 1976.

48/...

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General References - References which give an overivew fo the area or collected papers relevant to a number of topics.

Specific References- References which are more specific to individual sections of the paper. Includes research reports journal articles etc.

54/...

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